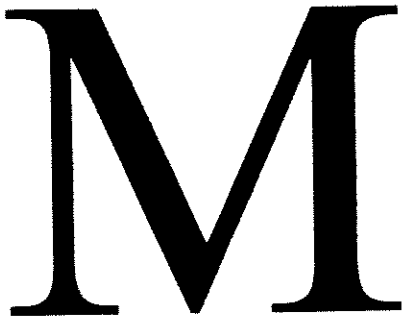
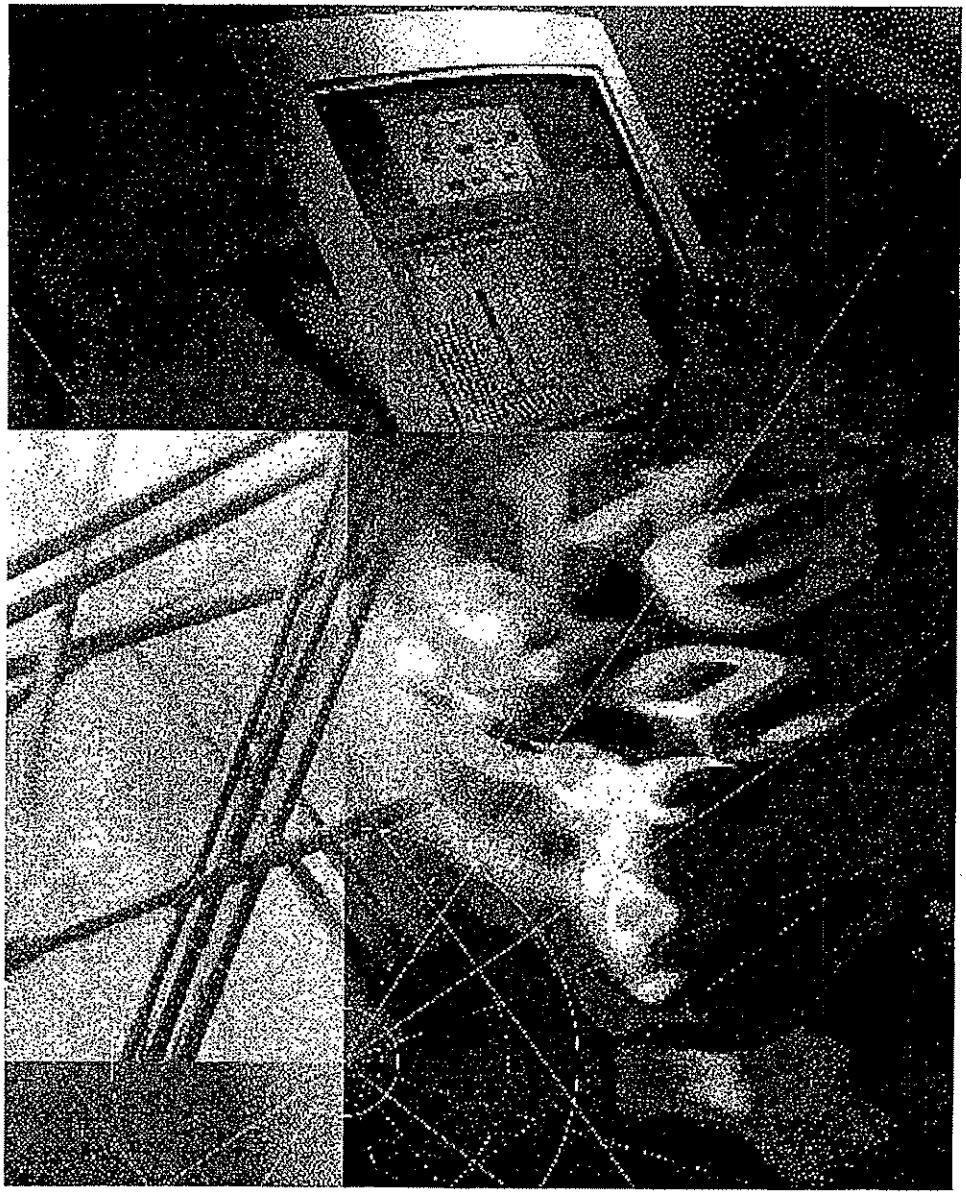


HP OpenView for Windows®
User Guide

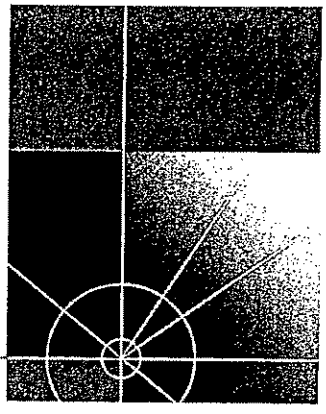
for Transcend Management Software

Version 6.1 for Windows® and '97 for Windows NT®



HP OpenView for Windows® User's Guide

Transcend Enterprise Manager for Windows Version 6.1
Transcend Workgroup Manager for Windows Version 6.1



http://www.3com.com/

Part No. 09-1114-001
October 1997

Hewlett-Packard Co.
10500 Ridgeview Court
Cupertino, California
95015 U.S.A.

CONTENTS

ABOUT THIS GUIDE

About This Guide provides an overview of this guide, describes guide conventions, tells you where to look for specific information and lists other publications that may be useful.

This user's guide describes the features and functions of HP OpenView for Windows Workgroup Node Manager (referred to as OpenView). To access additional information that is not covered in this guide, click on any of the program Help buttons.

This guide is intended for network system administrators that are familiar with the Windows user interface and have a basic understand of networks and the Simple Network Management Protocol (SNMP).

If you installed applications to run under HP OpenView, you will find descriptions of application-specific functions in the application documentation.

If the information in the Release Notes shipped with your product differs from the information in this guide, follow the Release Notes.

Finding Specific Information in This Guide

This table shows where to find specific information in this guide.

If you are looking for	Turn to
An overview of HP OpenView features and how it manages networks	Chapter 1
How to create a map using Autodiscovery	Chapter 2
How to create and edit network maps using the map toolbar and commands	Chapter 3
A description of polling, trapping, and configuring alarms	Chapter 4

(continued)

How to use the SNMP Manager to query SNMP devices and display query results	Chapter 5
What to do if you are having difficulty getting HP OpenView to work	Chapter 6
The HP OpenView Visual Basic custom controls that are provided for application development	Chapter 7
A list of all the HP OpenView commands and tools and their functions	Appendix A
How to configure Notify! Connect	Appendix B

Conventions

Table 1 and Table 2 list conventions that are used throughout this guide.

Table 1 Notice Icons

Icon	Notice Type	Alerts you to...
	Information note	Important features or instructions
	Caution	Risk of personal safety, system damage, or loss of data
	Warning	Risk of severe personal injury

Table 2 Text Conventions

Convention	Description
`Syntax`	The word "syntax" means you must evaluate the syntax provided and supply the appropriate values. Placeholders for values you must supply appear in angle brackets. Example: Enable RIPIP by using the following syntax: `SETDefault !<port> -RIPIP CONTrol = Listen` In this example, you must supply a port number for <port>.

(continued)

Table 2 Text Conventions (continued)

Convention	Description
Commands	The word "command" means you must enter the command exactly as shown in text and press the Return or Enter key. Example: To remove the IP address, enter the following command: `SETDefault !0 -IP NETaddr = 0.0.0.0`  *This guide always gives the full form of a command in uppercase and lowercase letters. However, you can abbreviate commands by entering only the uppercase letters and the appropriate value. Commands are not case-sensitive.*
`Screen displays`	This typeface represents information as it appears on the screen.
The words "enter" and "type"	When you see the word "enter" in this guide, you must type something, and then press the Return or Enter key. Do not press the Return or Enter key when an instruction simply says "type."
[Key] names	Key names appear in text in one of two ways: ▪ Referred to by their labels, such as "the Return key" or "the Escape key" ▪ Written with brackets, such as [Return] or [Esc]. If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press [Ctrl]+[Alt]+[Del].
Menu commands and *buttons*	Menu commands or button names appear in italics. Example: From the *Help* menu, select *Contents*.
Words in *italicized* type	Italics emphasize a point or denote new terms at the place where they are defined in the text.
Words in **bold-face** type	Bold text denotes key features.

1 OVERVIEW

The HP OpenView Workgroup Node Manager is a "platform" for network management programs. It provides a standard graphic interface so that multiple network applications can share a common display and alarm system. In addition, it provides basic network management functions to interface with devices on the network. Workgroup Node Manager consists of:

- Maps
- Autodiscovery
- Alarms
- SNMP Manager

HP OpenView Interface

HP OpenView provides a user interface for managing network applications and devices; see Figure 1-1.

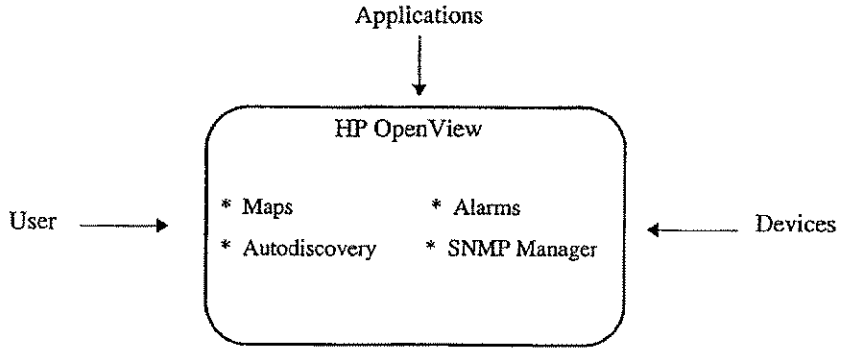


Figure 1-1 HP OpenView interface

Maps

Devices in the network are displayed on maps. Devices and subnetworks can be organized into submaps to suit your needs. You can create separate submaps of devices grouped by device function, network organization, or corporate organization. You can use the maps to manage your network from a single display even when the network includes devices from different manufacturers.

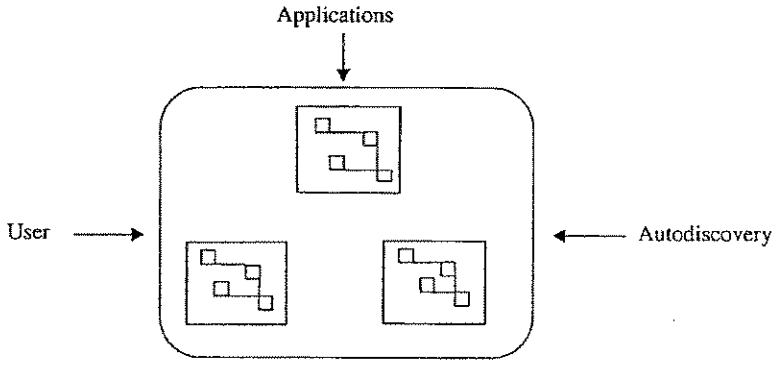


Figure 1-2 Managing the network using maps

Programs that manage hubs, routers, servers, and other network devices can run in the background. Changes in network status are displayed on network maps with icons representing devices. Color is used to indicate device status. Submaps allow you to create several views of your network to simplify management. You can add meaningful graphics such as geographic maps and floor plans as backgrounds for your map to provide "real world" visual references for your network.

Autodiscovery

Autodiscovery is a function that helps you to create maps of your network. It uses information such as the range of network addresses, community names, and the types of devices on your network to locate most of the devices present. You can then request OpenView to draw a network map based on the devices found.

Manufacturers who have designed their devices to be managed through OpenView can provide descriptions of their devices so that the correct icons and labels can be used by the layout operation. This

information is stored in a device definition file. In addition, manufacturers can provide application programs that can locate their devices or provide additional information for use in creating maps.

Once you have entered information about the networks and devices that you want discovered you can perform a discovery. The discovery process creates a list of discovered devices. Application programs can provide supplemental information for the list. You can then control which devices in the list are used to create the map using the layout function.

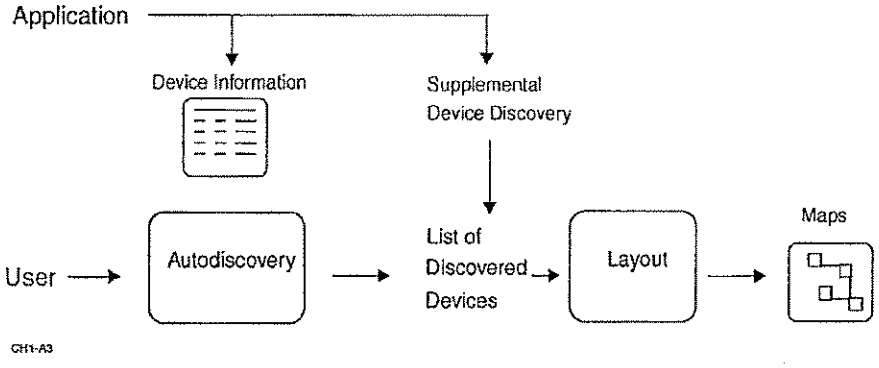


Figure 1-3 Autodiscovery can be used to automatically create network maps

Alarms

Changes in device status or "alarms" provide the notification to the OpenView map that a noteworthy event has happened on the network. Alarms are the main mechanism used to communicate device status. Alarms are displayed on the network map and are listed in the Alarm Log. The alarms are also recorded in a Paradox database. The Alarm database allows you to generate reports or archive network performance. In addition to visual cues, alarms can be set to trigger sounds, programs, or even activate a remote paging device based on the type of alarm received.

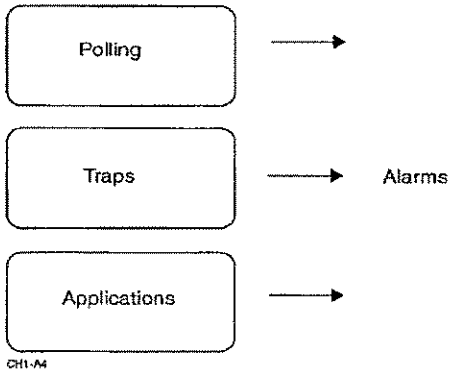


Figure 1-4 Alarms are generated by third party applications and the OpenView Polling and Trap Manager functions

Polling Polling is a function that lets you check to see if a network device is *up* (running) or *down* (not running). A poll is a simple request sent to a device that asks the device to respond. If the device responds, it is functioning. You can have OpenView "poll" a list of devices periodically to check to see if they are running. When a response (or time out due to a lack of response) occurs, OpenView processes the information as an alarm; see Figure 1-5.

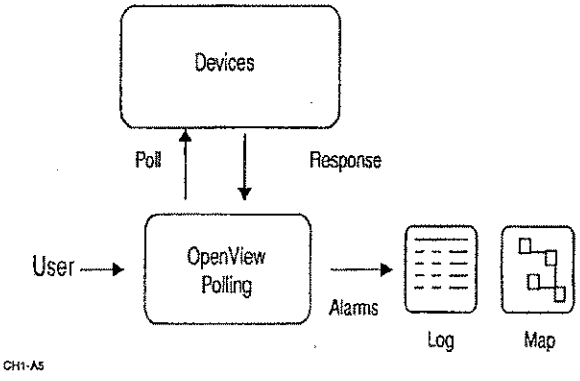


Figure 1-5 HP OpenView polling

Trapping Some devices can send messages when certain conditions occur. The conditions may be startup, shutdown, data error, or a preset level of activity. The message resulting from a device condition is called a trap. Devices vary in their ability to send traps. Refer to your device manual to see if the device can send traps.

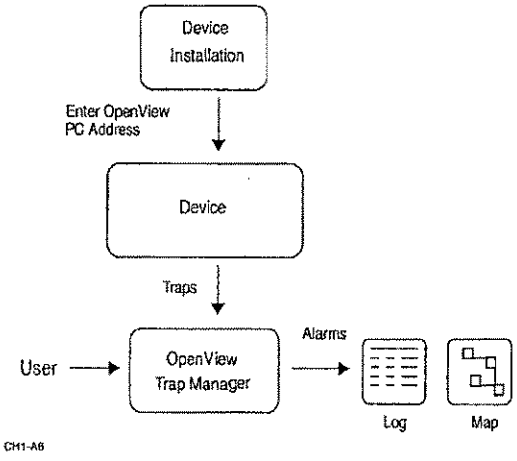


Figure 1-6 Trapping

In order for a device to send a trap, you must tell it where to send the trap. The address of the OpenView console to receive the traps is usually set when the device is installed. The device manual should indicate how to set this address on the device.

Once devices are configured to send traps to the OpenView console, they will be recorded in the alarm log by default. You can customize how OpenView responds to traps using the Customize Traps dialog. You can select which traps to respond to. The traps can be of particular types or from particular device classes. Trap types can be selected from a list of standard traps or you can define custom traps for specific device classes. When OpenView receives a trap message OpenView converts it into an alarm and processes it through the alarm system.

Applications and Alarms

Equipment manufacturers create application programs to provide information on the status of their devices. Application programs can request status information from the device, make device settings, or run device diagnostics. The application program then sends the appropriate information to OpenView as alarms.

Alarm System

OpenView allows you to configure how alarms will be processed or displayed on maps, clear alarm conditions, and create reports from the alarm log. In addition, you can configure alarms of a particular level to start programs, send pages, or be forwarded to other workstations.

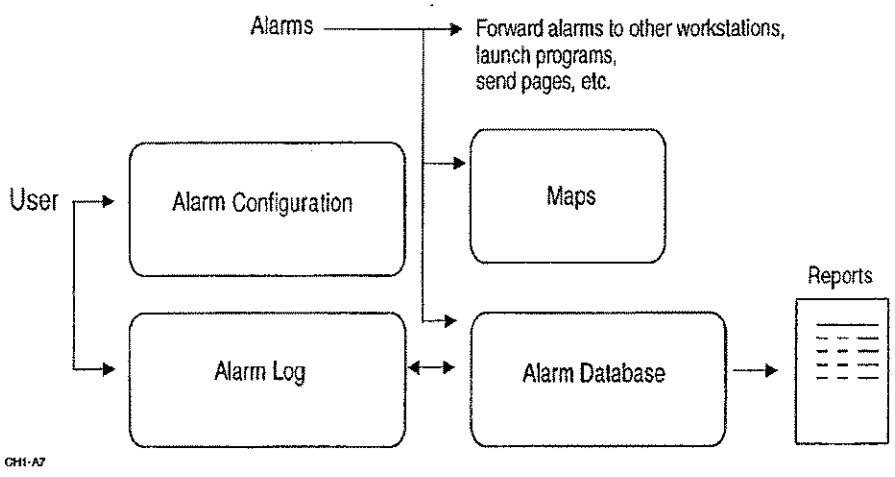


Figure 1-7 HP OpenView Alarm system

SNMP Manager

The Simple Network Management Protocol (SNMP) Version 1 is a standard that defines a method of communicating with and controlling network devices. Devices that support the SNMP V.1 standard can be queried for their status and other device information. Some devices allow you to change device settings or configuration using SNMP commands. SNMP commands request that the values of device settings be returned ("Gets") or changed ("Sets"). OpenView provides an SNMP Management function that can be used to communicate with SNMP devices.

The device settings and other device information are available as variables and are defined either in a standard Management Information Base (MIB) file or in a custom MIB file provided by the device manufacturer. The SNMP Manager uses a database to hold lists of the variables that can be accessed for each device on your network. Before you can use the SNMP Manager you must make sure that the list of variables needed for your device have been added to the database used by the SNMP Manager. The process of adding the device information to the database used by the SNMP Manager is called "compiling".

The information returned by the device can be displayed in tabular form, graphic form, or saved in a file. The device requests (queries) that you use with the SNMP manager consist of a device address, variable list, and instructions for processing the results returned by the device. You can store these queries in a file for use again.

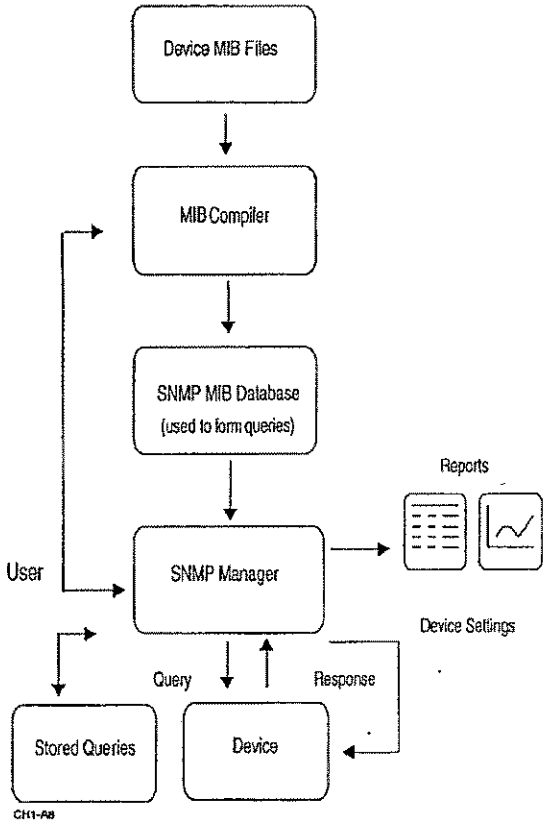


Figure 1-8 SNMP Manager can be used to obtain information from devices or change device settings

2 CREATING NETWORK MAPS AUTOMATICALLY

You can create network maps automatically using Autodiscovery to locate and identify devices in your network. Autodiscovery and Layout execute automatically. Autodiscovery starts when OpenView is started. When Autodiscovery completes, a map will automatically be drawn. Polling will automatically start as soon as the discovery process is complete.

You can also manually create network maps using the map tools. In most instances, creating maps with Autodiscovery is the fastest and easiest method. You can change a map created with Autodiscovery at any time using the map tools. This chapter provides information about how to create maps using Autodiscovery. It includes information about:

- Entering information required to perform a discovery
- Starting the process for a IP discovery and an Extended (IPX, other) discovery
- Creating submaps of discovered devices

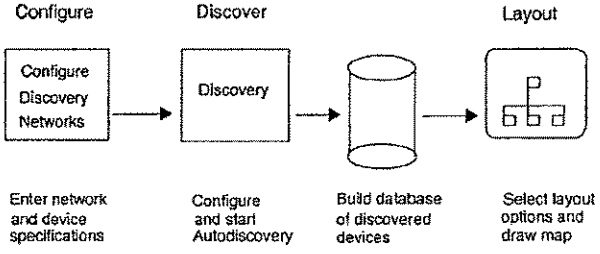


Figure 2-1 Autodiscovery

For information about manually creating new maps or editing existing maps, see Chapter 3, "Creating Network Maps Manually."

IP and IPX Discoveries

Autodiscovery searches IP, IPX, and VINES networks, identifies devices on the networks, and assigns the appropriate OpenView map symbol to each device. You can then use Autodiscovery's layout function to create an OpenView map of the devices.

IP Discovery uses routers to discover and identify all IP devices in your network. Autodiscovery reads each router's "next hop" and ARP tables, then discovers and identifies all the devices listed in the tables. Autodiscovery continues the IP discovery until it has searched all segments of the network.

Extended discovery is a combination of IPX and supplemental IP device discovery. It uses NetWare diagnostic services to locate all IPX devices, then uses SNMP to identify the devices. It can also run program modules created by equipment suppliers that provide additional discovery information. These supplemental modules may or may not be present depending on your OpenView system's configuration.

Once you start either an IP or Extended discovery, they run in the background and perform periodic discoveries to update a database of device information. You can configure Autodiscovery to schedule discoveries, limit the devices included in a search, and customize the layout of an OpenView map.

Preparing for a Discovery

To start a discovery, you need to know some information about your own network and the networks you want Autodiscovery to search.

To run an IP discovery, you must provide the following information:

- Your IP subnet mask
- The IP networks you want to discover
- The IP address and community name for your default gateway or router if present.

You can run an Extended discovery of IPX and VINES devices without providing information about your network. However, if you want to limit the discovery to specific IPX or VINES networks, you need to

provide the names of those networks. You can use Novell's COMCHECK utility to see which IPX networks are currently in use.

You can use the form provided here to record the information.

IP Subnet Mask _____ . _____ . _____ . _____

IP Network Addresses _____ . _____ . _____ . _____

_____ . _____ . _____ . _____

_____ . _____ . _____ . _____

IP Router/Gateway Address _____ . _____ . _____ . _____

IP Router/Gateway Community Name _____

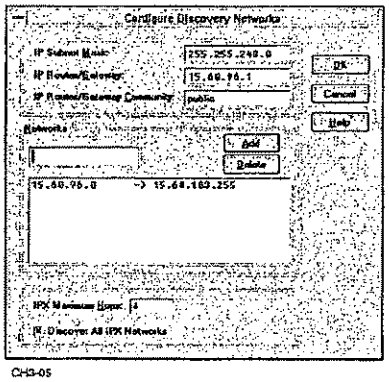
IPX Network Names _____

_____

_____

Configuring Autodiscovery

Before you can run a discovery, you need to enter information about your network and the networks you want to search. You enter this information in the **Configure Discovery Networks** dialog box. To open the dialog box, choose **Configure** from the **Autodiscovery** menu and then choose **Discovery Networks**.



CH3-05

You don't need to have both IPX and IP devices on your network for Autodiscovery to run. If you have only one type of device, just enter the IP or IPX information in the appropriate fields.

Your Computer's Settings

IP Subnet Mask – Enter your subnet mask. This mask should be specific to your local network and also the same as the mask you specified when you installed your TCP/IP protocol stack. The Subnet Mask is used to calculate the node address range for your network. If you are using the FTP stack, this value will be entered for you.

IP Router/Gateway – Enter the address for your IP default gateway or router. Autodiscovery uses this address to begin a discovery. If you do not enter an address for a router, OpenView will use the subnet mask to test each of the possible addresses in your network. This process takes much longer and uses more network resources than obtaining valid addresses from the router. If you are using the FTP stack, this value will be entered for you. The IP Router/Gateway applies to the current map only.

IP Router/Gateway Community – Enter the community name. OpenView uses this name as a password to gain access to your gateway or router, and by using SNMP as the means of communication.

The default community name in the router community field is stored in the central database (accessed through Customize Device Access) for the IP address for the router. If no name is entered, the system default is used. By default, the system default is "public."

Networks

Net Address – Enter the address of a network you want to search in the **Networks** text field, then click the **Add Net/Set Mask** button. Autodiscovery adds the network to the list of networks to be searched. To delete a network from the list, select the network address in the list, then click the **Delete** button. If you don't know the address of a network, you can enter the address of one device on the network and click the **Add Net/Set Mask** button. Autodiscovery will calculate the network's address using the IP subnet mask (below) and add it to the list. The range of networks calculated is displayed.

Subnet Mask – This field is only relevant for IP networks. If the Subnet Mask field is empty, the default mask will be used when you press Add Net/Set Mask. You can also edit the Subnet Mask to other values if

your system connects to IP networks with different subnet masks. The subnet masks are used initially to determine how you have grouped IP addresses into networks. OpenView discovery may correct these values during Router Discovery as it reads the subnet masks configured within routers.

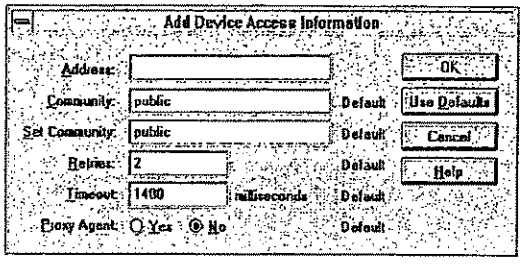
Discover All IP Networks – Select this option if you don't want to limit the IP discovery to only those IP networks listed in the Networks section, but prefer Autodiscovery to Locate and identify all IP Networks within the number of hops specified in "IP Maximum Hops."

Discover All IPX Networks – Select this option if you don't want to limit the IPX discovery to only those IPX networks listed in the Networks section, but prefer Autodiscovery to locate and identify all IPX Networks within the number of hops specified in "IPX Maximum Hops."

When you have entered all the information, click **OK** to save the information. All of the information that you enter in the "Configure Discovery Networks" dialog is saved with the map. When you load a different map, you will load the values saved with the newly loaded map.

To add information for additional router or other devices in your network use the Customize Device Access command.

Choose **Customize Device Access** from the **Options** menu. Choose **Add**, this will display the **Add Device Access Information** dialog box.



CH3-04

Type the addresses of the network routers and their respective community names in the Address and Community Name text boxes. Click **OK**.

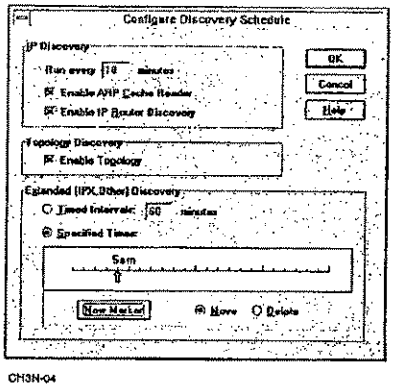
For more information about how to use the **Customize Device Access** dialog box, see Chapter 4.

Managing Autodiscovery

The discovery processes can be scheduled to run automatically or can start Discovery on demand using the **Discovery Manager** dialog box. You can specify devices to be added to or deleted from Autodiscovery. You can also monitor the progress of both the IP and discoveries in the **Discovery Manager** dialog box. Note that the Discovery Manager dialog box is iconized and the Discovery Manager command disabled while Discovery is running. To view the Discovery Manager double click the icon.

Scheduling Discovery

You can set a schedule for Autodiscovery to run both the IP and Extended (IPX, other) discoveries. You set these schedules in the **Configure Discovery Schedule** dialog box. To open the dialog box, go to the **Autodiscovery** menu and choose **Configure**, then choose **Discovery Schedule**.



CH3N-04

IP Discovery – Enter the number of minutes you want as the interval between discovery processes.

Choose the **Enable ARP Cache Reader** option if you want Autodiscovery to search all ARP Caches each time IP Discovery is run.

Choose the **Enable IP Router Discovery** option if you want Autodiscovery, to search for routers each time IP Discovery is run.

If you want to completely disable IP discovery, deselect both the **Enable ARP Cache Reader** option and the **Enable IP Router Discovery** option.

Router Discovery – If you have enabled Router Discovery, it will run whenever:

- Basic IP Discovery is first run
- After you have selected Clear Database
- If you select Discover from the AutoDiscovery menu and then Discover Routers

Before running Router Discovery, to correctly determine the connectivity of all IP networks you should specify the Community names (see *Customize Device Access*) of all routers connecting discovery networks (see *Configuring Discovery Networks*). Without correct community names, the router discovery will not be completely successful.

Router Discovery can dynamically prompt the user for the community name of any router for which it needs a community name. To enable this feature, the OVWIN.INI file should have the following specified in the [Discovery] section:

```
IPRouterAskForCommunity=yes
```

A prompt appears to the user when the community name of a router is needed. Router discovery will be suspended until the user has made a selection. The user should correct the Community Name, click **Save Community**, and then click **Done** to allow router discovery to resume. This prompt appears as each Router with an incorrect community name is detected. To have no further requests for Community Name during router discovery, click **Ask No More**.

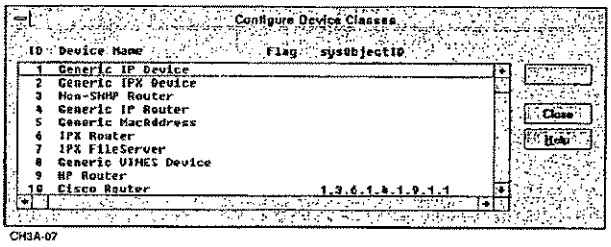
Topology Discovery – You can have OpenView automatically determine how segments in a network are connected. If Discover Topology is enabled, at the end of the normal discovery process OpenView will attempt to determine the segmentation of the network based on how the discovered devices are connected to bridges. You can also start a topology discovery at any time using the Discovery Topology command in the Discover Menu under autodiscovery. The status of the topology discovery will be displayed in the Extended Discovery status field in the Discovery Manager Dialog. When you perform a layout the topology information will be used to show how the subnets in your network are connected. See Help for more information on Topology Discovery.

Extended (IPX, other) Discovery – If you want Autodiscovery to start the extended (IPX, other) Discovery at regular intervals, choose the **Timed Intervals** option button and enter the number of minutes you want for the interval.

If you want Autodiscovery to start the Extended (IPX, other) Discovery at specific times, choose the **Specified Times** option button and place a marker at each hour you want to run a discovery. To place a marker, choose the **Move** option button, then click the **New Marker** button and drag the marker to the time you want. As you drag the marker, the corresponding time appears over the bar. If you want to delete a marker, choose the **Delete** option button, then click the marker you want to delete.

Configuring Device Classes

If you want to narrow the search for a discovery or limit the devices drawn by layout, you can configure Autodiscovery to ignore certain device types in its search. For example, if your network has a large number of personal computers, you may want to reduce the discovery process time by excluding the computers from the discovery or you may want to layout a map that contains only certain types of devices. You specify the device types you want Autodiscovery to ignore in the **Configure Device Classes** dialog box. To open the dialog box, choose **Configure** from the **Autodiscovery** menu, then choose **Device Classes**.



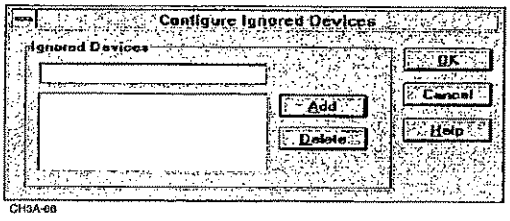
The **Configure Device Classes** dialog box lists all registered device classes. Any device that doesn't respond to an SNMP identification request (such as most personal computers) is listed as a Generic IP or Generic IPX device.

Ignore – Choose the device type that you want Autodiscovery to ignore and then click the **Ignore** button or double-click on the entry to toggle the "ignore" flag.

If you want to include the device type in the search or layout again, choose the device type in the list, then click the **Include** button.

Configuring Ignored Devices

If you want to prevent specific devices from being added to the Autodiscovery database by discovery, you can configure Autodiscovery to ignore those devices. You specify these devices in the **Configure Ignored Devices** dialog box. To open the dialog box, choose **Configure** from the **Autodiscovery** menu, then choose **Ignored Devices**.

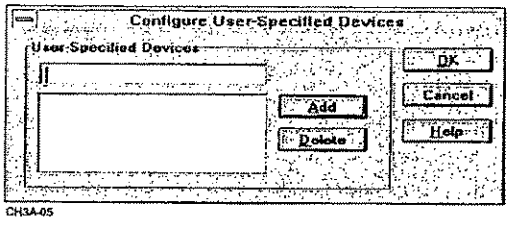


Ignored Devices – Enter the network address of the device you want to ignore, then click the **Add** button to add the device to the list of ignored devices. The device will not be removed from the Autodiscovery database but will not be included in any maps you create from the database.

If you want an ignored device to be included during layout, remove it from the list of ignored devices. Click the device's address in the list box, then click the **Delete** button to remove it from the list. If the device is contained in the database, Autodiscovery will include it in any maps you create from the database. Press **OK** to save the changes to the database. The list of ignored devices is stored with the current map.

User-Specified Devices

You can maintain a separate list of devices to be added, without running an entire discovery. When you add a device manually, Autodiscovery includes it in the database and in any maps you create from the database. You add these devices using the **Configure User-Specified Devices** dialog box. To open the dialog box, choose **Configure** from the **Autodiscovery** menu, then choose **User-Specified Devices**.



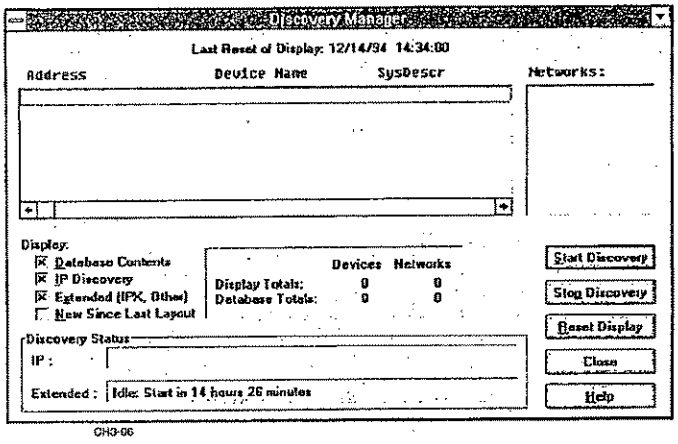
User-Specified Devices – Enter the network address of the device you want to add to the supplemental list, then click the **Add** button to add the address to the list box. If you want to delete a device from the list, select the device's address in the list box and click the **Delete** button. Press **OK** to save the changes to the database.

If a device you entered is in a network that you did not specify as a discovery network, a message box will ask if you want the network added to the list of discovery networks. If you answer "Yes", all devices in the added network will be discovered and added to your database. If

you say "No", the device that you specified will be added as a user-specified device. The list of user-specified devices is stored with the current map.

Viewing Autodiscovery Results

To view the Autodiscovery process, choose **Discover** from the **Autodiscovery** menu, then choose **Discovery Manager**. If the Discovery Manager command is grayed, this means that the Discovery Manager is already being displayed, though it may be hidden behind another window or possibly be iconized.



The list box in the Discovery Manager displays the address, device name, and System Description MIB variable of each discovered SNMP device.

If Autodiscovery cannot identify a device, the list displays the device name as a Generic IP or Generic IPX device.

Networks – This field lists the address of each network that contains a discovered device. If a network that you entered in the discovery Networks dialog is *not* listed no devices were discovered in this network. Verify that you have entered the correct network address and community name.

Display – You can control the contents of the device list by choosing one or more of the display options.

- Choose **Database Contents** to show all discovered devices.
- Choose **IP Discovery** to show all devices discovered by IP Discovery since the last time you reset the display.
- Choose **Extended (IPX, other) Discovery** to show all devices discovered by Extended (IPX, other) Discovery since the last time you reset the display.
- Choose **New Since Last Layout** to show all devices added to the database since the last layout. (This choice deselects the other options.)

Database Contents – This option overrides the other three options. For example, if you choose **Database Contents**, but don't choose **Extended (IPX, other) Discovery**, Autodiscovery still displays all discovered devices, including those located by an Extended discovery. However, newly discovered devices will not appear. This list is not updated with new data.

Totals – This box displays current totals of devices and networks for the display list and for the Autodiscovery database.

Start Discovery – Click this button to start.

Stop Discovery – Click this button to stop.

Reset Display – Click this button to clear the list box. When you click **Reset Display**, Autodiscovery clears only the display list, not the Autodiscovery database. The date and time when you last reset the display is shown at the top of the **Discovery Manager**.

Discovery Status – This box shows the current status of the IP and Extended (IPX, other) discoveries.

IP – This field shows the amount of time until the next discovery. When Autodiscovery is running this field also displays next hop routers and SNMP requests to specific IP addresses.

Extended – This field tells you whether or not Autodiscovery is currently running an Extended discovery.

Maintaining the Autodiscovery Database

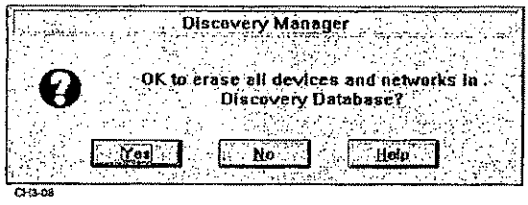
You can save the contents of the Autodiscovery database. If the Autodiscovery database has more information than you want, you can clear it. The database is a part of the map. Saving the map will also save the autodiscovery database for the map. (Note that the **New** command in the file menu does not clear the database.)

Saving the Database

To save a readable description of the database, choose **Discover** from the **Autodiscovery** menu, then choose **Dump Discovery Database.** Autodiscovery lists the database contents in the OVDUMPIT file. This file is stored in the OpenView for Windows directory. Each "dump" appends to end of the OVDUMPIT file, so you may want to delete or remove the current file before dumping the database to it.

Clearing the Database

To clear the database, choose **Discover** from the **Autodiscovery** menu, then choose **Clear Discovery Database.** Autodiscovery displays a message asking if you want to reset all the discovery information.



To clear the database, click on **Yes**. If you don't want to clear the database, click on **No**. Note that this does not clear the user-specified configuration information such as discovery networks, user-specified devices, ignored devices, or scheduling information. It only affects the Discovery database for the currently loaded map.

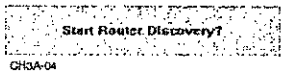
Running a Router Discovery

After completing an initial discovery, Autodiscovery can run periodic discoveries, updating its database with new information from routers and ARP caches. But you may want to start a router

discovery without waiting for a scheduled discovery process. This may occur if for example, you have installed a new router, or added a new network to discover.

To run a router discovery, choose **Discover** from the **Autodiscovery** menu, then choose **Discover Routers**.

Autodiscovery displays a message to confirm that a router discovery should be performed.



CH3A-04

Click **OK** to clear the message from the screen.

Creating Submaps of Discovered Devices

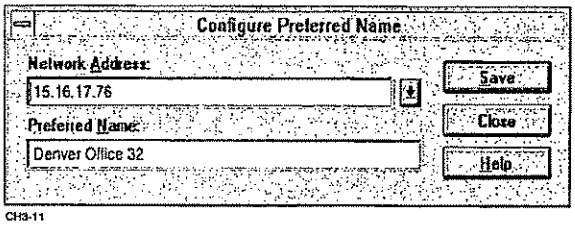
Once you have used Autodiscovery to identify network devices, you can create submaps containing the discovered devices. To create submaps using information obtained from Autodiscovery you:

- Configure preferred names (optional)
- Set layout options (optional)
- Perform the layout

Configuring Preferred Names

You can associate a more meaningful name (for example, *Denver Office #2*) with the device address. This preferred name is saved into the central database and is used for all maps drawn by layout on this OpenView console.

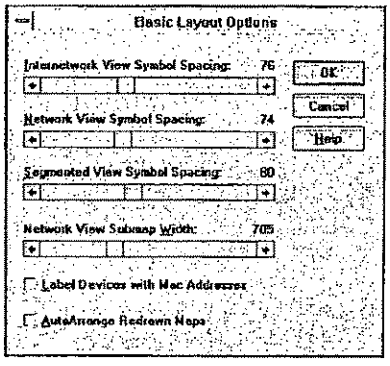
To associate a name with a device address, choose **Configure Preferred Name** from **Layout** in the **Autodiscovery** menu. Type the address in the Network Address text box and then type the name you want to associate with the device in the Preferred Name text box. Click on the **Save** button.



CH3-11

Setting Layout Options

You can change the general appearance of your layout map by setting layout options in the **Basic Layout Options** dialog box. To open the **Basic Layout Options** dialog box, choose **Layout** from the **Autodiscovery** menu, then choose **Basic Layout Options**.



CH3-13

Internetwork View Symbol Spacing – Drag the scroll box to decrease or increase the distance between symbols on the "Internetwork" submap (called "ALL NETS") of the current map. The spacing number decreases or increases according to the position of the scroll box on the scroll bar.

Network View Symbol Spacing – Drag the scroll box to decrease or increase the distance between symbols on each of the Network View submaps created by layout. The spacing number decreases or increases according to the position of the scroll box on the scroll bar.

Segmented View Symbol Spacing – Drag this scroll bar to specify the horizontal spacing between symbols representing each device in the Segmented View submaps. This will take effect the next time you do a Basic Layout and Topology Discovery has been enabled.

Network View Submap Width – Drag the scroll box to decrease or increase the width of all submaps in your layout. The width number decreases or increases according to the position of the scroll box on the scroll bar. A greater width allows more symbols to fit on a submap.

Label Devices with MAC Addresses – A MAC (Media Access Control) address is the hard coded address of the device's network interface.These addresses are assigned by hardware manufacturers and should be present on the network device or with the documentation shipped with the device. Choose this option if you want to display the MAC address for each device in the device labels of your layout map.

AutoArrange Redrawn Maps – This checkbox allows you to have OpenView layout all discovered devices. If this checkbox is not checked, OpenView will not change the position of devices already on the map. Devices that are new since the last layout will be added at the bottom of the map.

When you have made all the changes you want to the layout options, click **OK** to save the changes. Autodiscovery will implement the changes in the next map you create with the **Do Basic Layout** command.

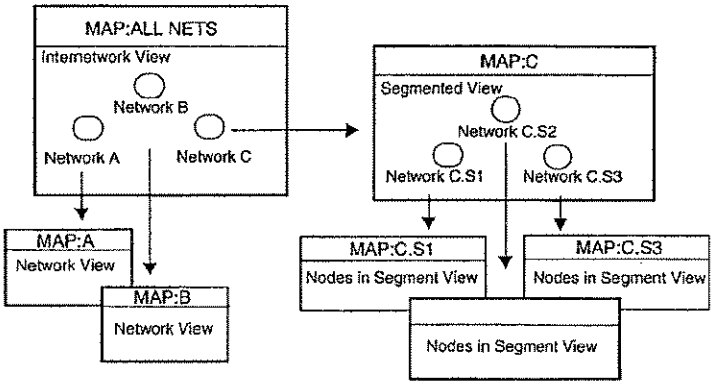
Executing the Layout

The **Do Basic Layout** command creates a new submap named "ALLNETS" with the notation "Internetwork View" and a set of "Network View" submaps consisting of one submap for each network containing discovered devices.

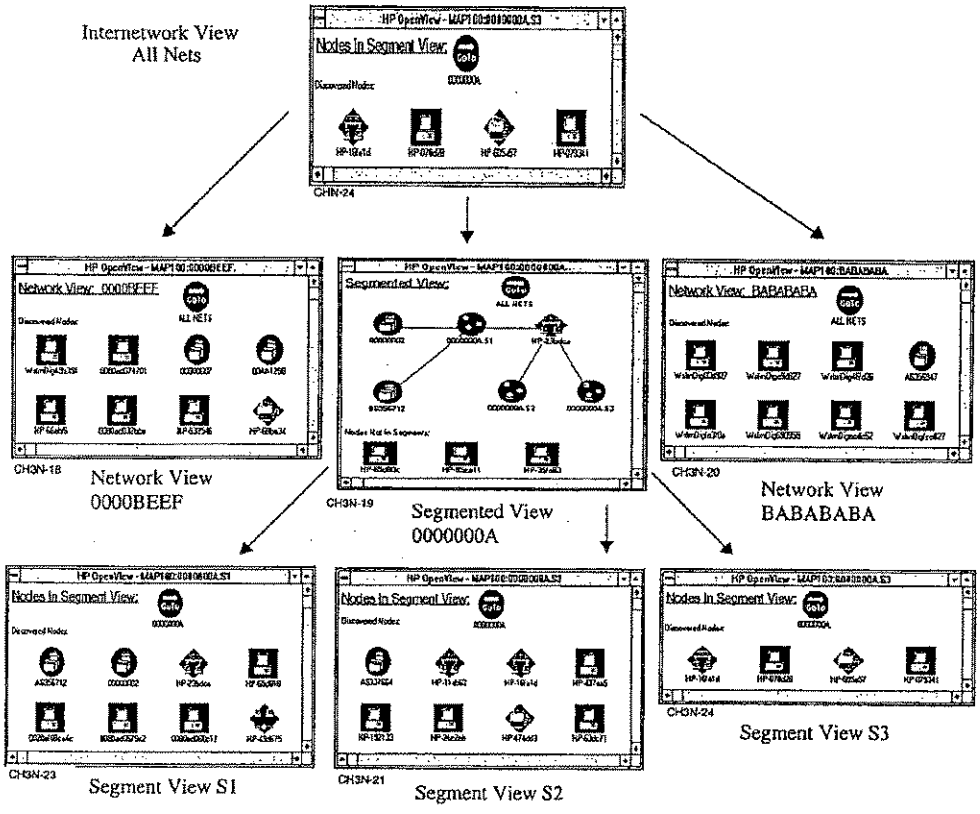
If you have enabled a Topology Discovery and Topologic information was found for any of the subnets, a "Segmented View" submap will be created showing the network segments found. The nodes found in each segment will be shown in a "Nodes in Segment" submap.

Each time you perform a layout in a given map file, any previous submaps drawn by OpenView will not be effected unless there is a change in the devices discovered. (New devices will be added at the bottom of the submap.) You can control the redrawing of the Layout

submaps using the AutoArrange setting in the Basic Layout Options dialog.



In the following example, a map named MAP100 has been created following an Autodiscovery with Topologic Discovery enabled. OpenView has identified three major subnets, 0000BEEF, BABABABA, and 0000000A. The 0000000A subnet was found to have three identifiable segments, S1, S2, and S3 as well as some nodes that OpenView could not place with a particular segment.



To determine whether to perform another layout, click the New Since Last Layout check box in the Discovery Manager dialog box. It displays nodes not drawn on your map that have been discovered since the last time you ran layout.

3 CREATING NETWORK MAPS MANUALLY

This chapter describes how to create, edit, save and print maps using the map Toolbar and map commands. The first part provides instructions on how to create a map. The last part of the chapter provides a summary of the map tools and commands.

For information about how to create maps using the Autodiscovery feature, see Chapter 2, *Creating Network Maps Automatically.*

OpenView maps use symbols or icons to represent network devices and references to submaps. Lines show communication links between devices. Connections within your submaps "attach" device symbols to each other so that the devices remain connected when moved on the map.

You can assign a background image for a map that shows the physical location of the network devices.

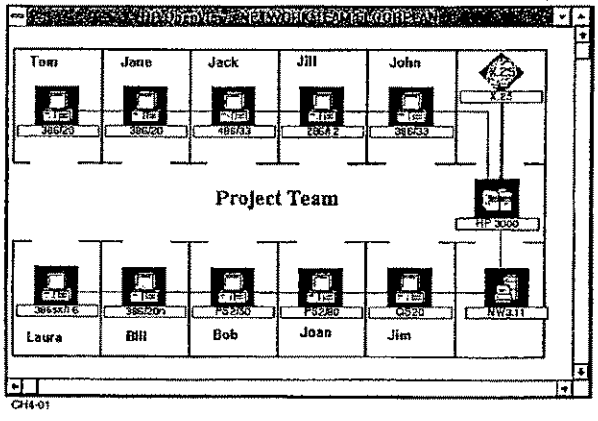


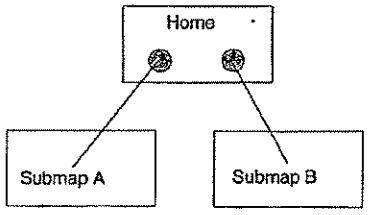
Figure 3-1 Network map with background

Drawing A Simple Map

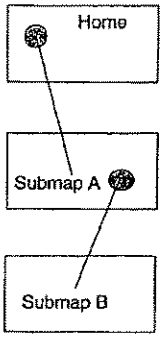
Before you create a network map, you need to know the physical layout of your network. It may be a single LAN, several LANs, or a very complex enterprise-wide network. Whenever possible you should break your map into submaps that help you visualize the network organization. You can create submaps for a workgroup, building site, device type, or any other convenient grouping. The same device can be placed on several submaps to provide alternate "views" of the network.

The home submap should contain a symbol for each submap on the next lower level in your map. Some home submaps include a submap symbol for every submap in the entire map. From the home submap you can "walk" through your entire network by clicking on submap symbols to display the associated submap.

If your home submap does not contain a symbol for every submap, it should contain a "path" to every device in the network via the submap symbol. The submap symbol displays the most severe status color for all of the nodes or devices within it. This allows the most severe status information for any device in the network to be propagated up to the home submap. The home submap can then give you an overview of status for the entire network.



Home submap with a submap symbol for each submap



Home submap with a path to all submaps

Drawing a Network Map

A typical procedure for drawing a network map is as follows:

1. List all of the devices that you want represented in your map.

   Note the network address of each device (if available) and its relation to the other devices.

2. Organize the devices hierarchically into levels based on their network position, device type, or function.

3. Create a "home" submap.

   If possible, add an appropriate background bitmap. Add a submap symbol on the home submap for each submap in the next level of your network hierarchy.

   If you have selected the "Create Submaps Automatically" option in the Customize OpenView dialog, a submap will be created automatically for each submap symbol that you add to the map.

4. Create a submap for each of the second level submaps shown on the home submap.

   If possible, add an appropriate bitmap to aid in symbol placement. Add device symbols to each submap along with lines, connections, and annotations.

5. Repeat the process for each level of the hierarchy until all devices are represented.

6. Add additional submaps as desired for alternate views of your network.

   For example, it might be useful to have a submap that shows all of the hubs or routers in a network.

Map Example

The following example uses OpenView to create a simple network map. The map file containing the submaps is NORTHNET.OVM. NorthNet consists of a home map, three regional submaps, and three local submaps for each regional submap.

Table 3-1 **Table of NorthNet Submaps**

Home Submap	Regional Submaps	Local Submaps	Devices
World			
	Europe	Edinburgh	Support PC #11, 12, 13
		Frankfurt	Support PC# 31, 32, 33
		Lyon	Support PC # 21, 22, 23
	Japan	Nagoya	Lab PC# 31, 32, 33
		Osaka	Support PC# 41, 42, 43
		Tokyo	PC, Hedeki, John, Yoshi Hub #3
	USA	Dallas	Lab PC# 11, 12, 13
		New York	Marketing PC# 11, 12, Sales Manager PC
		San Jose	Lab PC# 21, 22, 23

Background bitmaps are used to make submap layouts more meaningful. The bitmaps used in NorthNet are WORLDMAP.BMP, USA.BMP, EUROPE2.BMP, FAREAST2.BMP, and OFFICE.BMP.

Creating a Map File and Home Submap

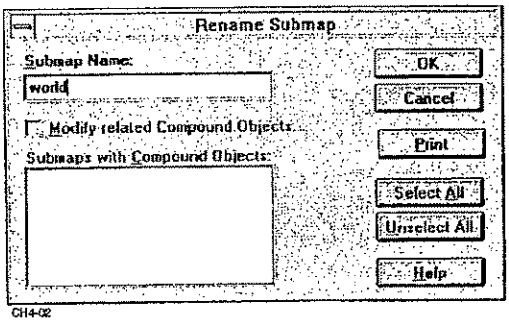
To create a map file and home submap, follow these steps:

1. Choose New from the File menu to create a new map.

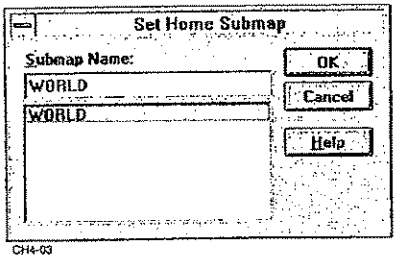
   OpenView will display an empty submap with a name of the form:

   `<map>:<submap>`

   where **<map>** and **<submap>** are initially "UNTITLED"
2. Choose Save As from the File menu to name the map file PRACTICE.
3. Choose Rename Submap from the Edit menu to name the current submap WORLD.



4 Choose Set Home Submap from the Edit menu and select WORLD as the home submap.



Adding a Background

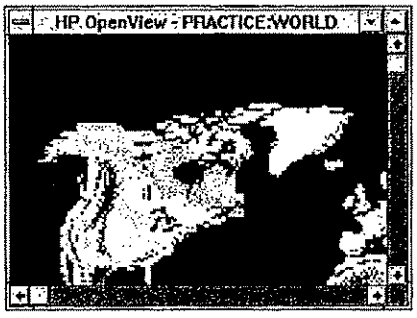
It's not necessary to use a background for a submap. They are independent of your network map data and can be added at any time. However, if you have access to suitable .BMP or .TIF images, they can actually make it easier to position icons. The bitmaps for NorthNet are provided in the OV\BKGROUND directory. If you do not use a background image, the grid commands in the View menu can be used to aid in positioning icons.

To add a background, follow these steps:

1 Choose Set Background Image from the Edit menu.

2 Find and select worldmap.bmp as the background for the WORLD submap.

3 Click OK.

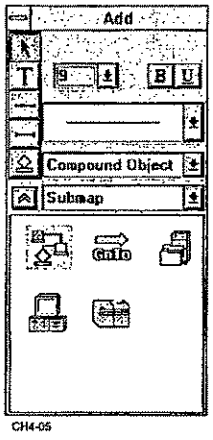


Adding Submap Symbols

To add submap symbols to your map, follow these steps:

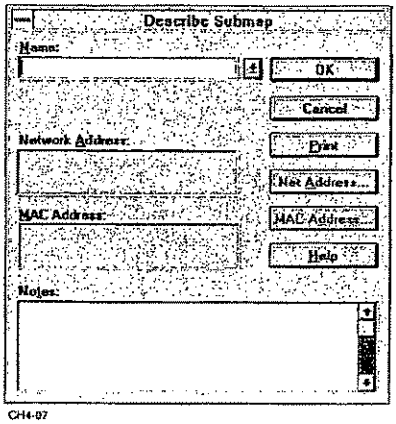
1 Choose Add from the Edit menu to display the Add Toolbox.

2 Select Compound Object symbols from the SubmapClass list (the symbol class button should be down).



3 Select the Submap symbol from the icon list.

4 Position the cursor in the center of North America on the WORLD submap and click to drop the icon.



5 Enter the name for the submap symbol icon.

If desired you can enter Net or MAC addresses. Click OK.

6 Repeat steps 4 through 6 for Europe and again for Japan.

7 If necessary you can click on an icon and drag it to adjust its position on the submap.

You can determine whether or not to enter a description at the time you add an icon. Choose **Customize HP OpenView** from the **Options** menu. This will display the Customize HP OpenView dialog box. If you check the **Describe objects as added** check box, the Describe box appears each time you add an object. If you don't check the **Describe objects as added** check box, the object is added without a name or label. You can add descriptions later on by selecting a map icon and using the **Describe** command in either the **Edit** or **Monitor** menus.

If the Describe function has not been deferred, you can press **OK** in the **Describe** dialog box and continue adding objects.

Adding Lines

Lines are used to show relationships between network elements and to depict the physical wiring of a network. Use the line button in the Add Toolbox to select line drawing mode. Open the Line Type list box and select a line pattern or weight. Lines are drawn by clicking to set a start point and then dragging and releasing to set the end point.

To create a "connection" between two symbols, you can use the connection button to select connect mode. Connections differ from lines in that map objects can be moved and their connections will stretch or contract to maintain the connection. Connections are drawn from the center of one symbol to the center of another. Connections are displayed behind the symbols that they connect.

To connect the three submap symbols on the WORLD submap, follow these steps:

1. Select connections using the connection button in the Add Toolbox.
2. Select the second thinnest solid line type in the line type list box.
3. Click on the USA icon and then drag the connection to the EUROPE icon and release.

   Repeat this so that all three regional submaps are connected.
4. To label a line, select the line and then choose Describe from the Edit or Monitor menus.

   Once a description has been entered for a line or connection, it can be given status the same as other device icons.

Adding Text

You can add text to a submap at any time using the text button in the Add Toolbox. Text is available in different sizes, bold, and underline. The font used is the Windows system default.

To add text to a submap, follow these steps:

1. Click the text button.
2. Select the size and style you want.
3. Click on the submap where text should start.
4. Type in the text.
5. Click again with the mouse or press the Enter key to end text entry.
6. After a text block has been entered, its position can be changed by selecting and dragging it with the mouse.

   If you need to change the text, delete and reenter the text block.

Add Remaining Submaps

If you have the "Create Submaps Automatically" option turned on in the Customize HP OpenView dialog box, a submap has been created for each submap symbol placed on your home submap. You can

double-click on the submap symbols one at a time and add symbols as required to each of the submaps. If your map contains several levels of submaps, repeat the process for each level.

Saving a Map

To save a map file with all of its submaps and symbol descriptions, choose **Save** from the **File** menu. This saves the map under its current name. To save the map to another name, choose **Save As** from the **File** menu.

Printing a Map

You can print individual submaps. To print the displayed portion of the submap with all of its symbols, lines, connections, text notations, and background bitmaps, choose **Print Submap** from the **File** menu.

You can also print out a text list of all of the submaps in a map as well as the names and types of devices in the submaps. This list is useful to check your map. Choose **Print Object List** from the **File** menu.

A database file, openview.CSV is created in the OV directory everytime a layout is performed. This file can be read into database programs and used to generate reports of devices in the network submap.

Web Browser

If a web page (HTML formatted data) is available for a selected device, the web browser commands will pass the URL locator for the page to a web browser. The web browser is normally configured at OpenView installation. The web browser can be selected or modified in the OVWIN.INI file. Information on the status of a device can be viewed, or its configuration settings can be modified using the browser. Refer to the online help for additional information.

Disabling the Map Editing Feature

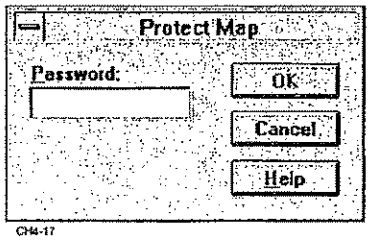
You can disable OpenView's map editing to prevent accidental changes to maps.

Layout can still modify the map. The layout feature sets the map to protected mode while it is generating a new map. When the map is completed, it changes to unprotected mode. The map locking feature allows you to prevent accidental changes to maps. It does not provide data security.

To disable manual editing of a map, follow these steps:

1 Choose Protect Map from the Options menu.

A dialog box is displayed prompting you to enter a password. The password is case sensitive.



2 Enter a password.

3 Click OK.

The map editing feature is disabled and the editing status is displayed at the end of the **Status Bar.**

The locking feature is only meant to prevent accidental map changes by the supervisor. The operator and observer can never edit the map regardless of the Map Protect settings. It does not provide data security. If you forget the password, open the OVWIN.INI file and delete the Key= entry under [OpenView].

Map Toolbar and Commands

OpenView provides a toolbar and menu items for creating and modifying network maps. Each of these tools and commands are described below.

Applications can add new menus and commands to existing menus. Refer to your application documentation for specific functions.

Status Bar

The status bar indicates the current selection and displays descriptive text for tool bar and menu selections. If you are not selecting a tool or menu command the field will display the last selected object's name